~~33~~. (New) The method according to new claim 32, wherein said three-dimensional data generator used in said obtaining step comprises an input device provided outside the computer apparatus.

REMARKS

Claims 1-3, 5, 7 and 8 are amended and new claims 29, 20, 31, 32 and 33 added. No new matter has been added.

REJECTION OF CLAIMS OF PARENT APPLICATION

Claims 1-28 of the parent application were rejected under 35 U.S.C. § 103(a) as being unpatentable over Letcher, Jr. The Examiner maintained that Letcher, Jr. teach editing along the surface of the three-dimensional object as explained with respect to the rejection of claim 23. The basis for the Examiner's position is that "no matter how the lines are moved, the surface of the model always contain the line, this implies changing the lines along the surface of a mode. Furthermore, the Examiner notes that Letcher, Jr. teach a model of a ship in Fig. 27 (attached to the office action), and that the coordinate points are the representation of a model.

However, Letcher, Jr. describes that "Many types of geometric entities including points, lines, curves, surfaces and solids can be defined, positioned, and edited to build up extremely precise definitions of highly complex objects" (column 1, lines 45-58). "..the relationship which was clearly in the mind of the user at the time line B was created is not retained by the CAGD program (column 1, lines 65-67). From these statements, it is clearly understand that no model or structure of an object exist in the CAGD system at

the start of the operation. However, from the above-mentioned geometric entities as parts of an object prepared in the system, desired geometric entities are selected and combined to construct an object structure. As described at the first step of "Create object" in Fig. 28 and at the first step of "Select entity" in Fig. 29, which shows details of the "Create object" step, entities **are selected and combined to create an object**. However, the object exists, not in the system, but only in the mind of the user of the system.

Figs. 3 to 24 of Letcher, Jr. show the various entities. Fig. 27 shows a three-dimensional model of an object **constructed** with the selected entities. Explanation as to how the model is constructed with entities is provided at column 15, line 50 to column 16, line 29. In the explanation, there is no description that a projected point, curve, surface or snake is used for the model of the yacht depicted in Fig. 27.

An essential difference between the system of Letcher, Jr. and the present invention is that the lines and curves of the model surface (of Fig. 27) are **not** created by projection. Table III of the reference shows a list of the entities which are selected and combined to create an object such as the three-dimensional model of Fig. 27. If a part other than what is included in Table II is necessary, this part may be created based on the entities in the list, as described at column 12, line 28+. The reference describes various processing such as mirroring, projection and rotation. However, this only creates a new entity based on the available entities, and the new entity is only a part of the object; edition or the like is performed thereafter.

As described in the present application, page 1, line 22 to page 2, line 4, a three-dimensional form model of a whole object can be generated by imaging the object from a plurality of positions and by synthesizing three-dimensional images appropriately. The

three-dimensional from model or a part thereof of an object can be used for computer graphics, computer-aided design or the like.

As further disclosed in the present application, when the amount of three-dimensional form data is large, there is a serious burden in handling the form data with a computer or it takes a long time to display a picture or to operate the data. The present invention provides three-dimensional form data of a smaller amount generated from the original three-dimensional form data and includes characteristic lines desired by a user.

The above mentioned problems, let alone solutions to them, are not recognized in Letcher, Jr.

Amended independent claims 1, 7 and 8 and new claim 30 clearly delineate that the second quantity of data of the three-dimensional form data outputted after the modifying step is smaller than the first quantity of data of the original three-dimensional form model. Such feature is clearly not disclose or suggested in Letcher, Jr. as the reference is not concerned with the problems described in the present application and which the present invention addresses.

A characteristic of the new independent claim 32 is that the data of a three-dimensional form model is generated before the projecting or modifying step. An example of the input device of new claim 33 is a three-dimensional camera (see the description at the bottom of page 1 that imaging of an object can generate the three-dimensional form model of a whole object).

CONCLUSION

As described in the Response dated November 3, 1999, the present invention performs editing (move, add, delete, or the like) of a line **along a surface of a three-dimensional form model**. The editing is performed by keeping characteristic lines of the three-dimensional form model. That is, the form of the three-dimensional form model is not changed (see explanation after page 28, line 10 of the present application).

As described above, Letcher, Jr., on the other hand, describe a CAD system that generates a three-dimensional form data **without** any model being used; a desired form is generated by using various kinds of entities. Fig. 27 of Letcher, Jr. shows a three-dimensional model of an object constructed with the selected entities. Even if it were presumed that Letcher Jr. teach changing the coordinate of a control point of a curve on the surface of the model, the reference clearly does not describe projecting a plurality of lines (closed curves) along a surface of (to) the three-dimensional from model, nor modifying the plurality of projected lines by (various recited operations). Thus, claims 1-28, as amended, and new claims 29-33 are patentable over Letcher, Jr. and their allowance is respectfully solicited.

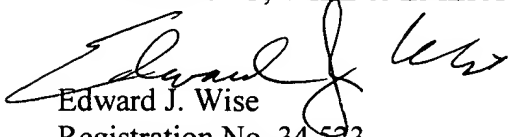
Accordingly, it is urged that the application, as amended, is in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of

this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

MCDERMOTT, WILL & EMERY



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